

=> FILE HCAPLUS

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FILE COVERS 1907 - 28 Jan 2005 VOL 142 ISS 6

FILE LAST UPDATED: 27 Jan 2005 (20050127/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L27

L3 1 SEA FILE=REGISTRY ABB=ON "ALUMINUM HYDROXIDE"/CN  
 L5 12985 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (WT OR WEIGHT? OR PART# OR PBW)  
 L15 289 SEA FILE=HCAPLUS ABB=ON (RUBBER? OR ELASTOMER?) AND GLASS?(2A) (FIBRE# OR FIBER#) AND (ALUMINUM HYDROXIDE OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
 L16 54 SEA FILE=HCAPLUS ABB=ON (RUBBER? OR ELASTOMER?)/SC, SX AND GLASS?(2A) (FIBRE# OR FIBER#) AND (ALUMINUM HYDROXIDE OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
 L17 2 SEA FILE=HCAPLUS ABB=ON (L15 OR L16) AND (TIRE# OR TYRE# OR TREAD#)  
 L18 21 SEA FILE=HCAPLUS ABB=ON (L15 OR L16) AND L5  
 L19 0 SEA FILE=HCAPLUS ABB=ON L17 AND L18  
 L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20)  
 L21 13018 SEA FILE=HCAPLUS ABB=ON (RUBBER? OR ELASTOMER?)/SC, SX, AB, BI AND GLASS?(2A) (FIBRE# OR FIBER#)  
 L22 2233 SEA FILE=HCAPLUS ABB=ON L20 AND L21  
 L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30)  
 L24 896 SEA FILE=HCAPLUS ABB=ON L21 AND L23  
 L26 11 SEA FILE=HCAPLUS ABB=ON (L22 OR L24) AND (TIRE# OR TYRE#) AND TREAD#  
 L27 12 SEA FILE=HCAPLUS ABB=ON L17 OR L19 OR L26

=> D L27 BIB ABS IND 1-12

L27 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:472210 HCAPLUS  
 DN 141:24978  
 TI Manufacture of **tread rubber** elements  
 IN Ikeda, Ikutsugu

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

PA Sumitomo Rubber Industries Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004160677	A2	20040610	JP 2002-325847	20021108
PRAI	JP 2002-325847		20021108		

AB Title elements, with rectangular cross section and containing short fibers oriented at  $\leq 45^\circ$  to the vertical line of the length sides of the cross section, are prepared by (a) extruding short fiber-containing **rubbers** through multiple orientation passages, which have cross sections with side length increases from feeding opening to the downstream and allowing the **rubbers** flow parallel to the cross section side, to form multiple primary oriented **rubbers**, (b) passing the multiple primary oriented **rubbers** through piled passages, and (c) discharging through the combined exit. Detailed illustrations are presented. A 10 phr short **glass fiber**-containing diene **rubber** composition was extruded as described above to form a **tread** with ice-skid resistance 20-30% higher than that of a **tread** prepared conventionally.

IC ICM B29C047-14  
 ICS B29D030-52; B29K021-00; B29L007-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST ice skid resistance **tire tread rubber**  
 oriented short fiber; extrusion app multiple flow passage manuf oriented fiber **rubber**

IT Synthetic **rubber**, uses  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (diene; manufacture of ice-skid-resistant **tire tread rubbers** containing oriented short fibers by extrusion apparatus equipped with multiple flow passages)

IT Extrusion apparatus for plastics and **rubbers**  
 (manufacture of ice-skid-resistant **tire tread rubbers** containing oriented short fibers by extrusion apparatus equipped with multiple flow passages)

IT **Glass fibers**, uses  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (short; manufacture of ice-skid-resistant **tire tread rubbers** containing oriented short fibers by extrusion apparatus equipped with multiple flow passages)

IT **Tires**  
 (treads; manufacture of ice-skid-resistant **tire tread rubbers** containing oriented short fibers by extrusion apparatus equipped with multiple flow passages)

L27 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN.

AN 2004:73564 HCAPLUS

DN 140:112692

TI **Rubber** compositions containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties

IN Horiguchi, Takuya; Minakoshi, Akira

PA Sumitomo Rubber Industries Ltd., Japan  
 SO Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1384600	A2	20040128	EP 2003-16808	20030723
	EP 1384600	A3	20040421		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004059629	A2	20040226	JP 2002-216569	20020725
	US 2004019135	A1	20040129	US 2003-625591	20030724
	CN 1473871	A	20040211	CN 2003-133196	20030725
PRAI	JP 2002-216569	A	20020725		
AB	The <b>rubber</b> composition comprises (A) 100 parts diene <b>rubber</b> , (B) 2-20 parts short fiber having average fiber diameter 10-100 $\mu$ m and average fiber length 0.01-4 mm, (C) 1-10 parts particles having Moh's hardness $\geq 5$ and average particle size $\leq 500$ $\mu$ m, and (D) 1-15 parts starch/plasticizer composite material. Thus, natural <b>rubber</b> (RSS 3) 70, butadiene <b>rubber</b> (Ubepol BR 150B) 30, carbon black (Showblack N 220) 45, <b>glass fiber</b> 10, emery 5, starch/plasticizer composite (Mater Bi 1128R) 5 parts and other additives were kneaded, vulcanized and molded, showing performance on ice and snow, wet gripping properties and abrasion resistance.				
IC	ICM B60C011-14 ICS B60C001-00; C08L009-00				
CC	39-13 (Synthetic <b>Elastomers</b> and Natural <b>Rubber</b> )				
ST	diene <b>rubber glass fiber</b> emery <b>tire tread</b> ; starch plasticizer composite diene <b>rubber tire</b>				
IT	Natural <b>rubber</b> , uses RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (RSS 3; <b>rubber</b> compns. containing diene <b>rubber</b> and short fibers for pneumatic <b>tires</b> with improved performance on ice and snow and wet gripping properties)				
IT	Carbon black, uses RL: MOA (Modifier or additive use); USES (Uses) (Showblack N 220; <b>rubber</b> compns. containing diene <b>rubber</b> and short fibers for pneumatic <b>tires</b> with improved performance on ice and snow and wet gripping properties)				
IT	Plasticizers (composite with starch; <b>rubber</b> compns. containing diene <b>rubber</b> and short fibers for pneumatic <b>tires</b> with improved performance on ice and snow and wet gripping properties)				
IT	Butadiene <b>rubber</b> , uses RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (of cis-1,4-configuration, Ubepol BR 150B; <b>rubber</b> compns. containing diene <b>rubber</b> and short fibers for pneumatic <b>tires</b> with improved performance on ice and snow and wet gripping properties)				
IT	<b>Glass fibers</b> , uses RL: MOA (Modifier or additive use); USES (Uses) ( <b>rubber</b> compns. containing diene <b>rubber</b> and short fibers for pneumatic <b>tires</b> with improved performance on ice				

and snow and wet gripping properties)

IT **Tires**

(**treads**; **rubber** compns. containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties)

IT 9003-17-2

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(butadiene **rubber**, of cis-1,4-configuration, Ubepol BR 150B; **rubber** compns. containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties)

IT 9005-25-8, Starch, uses

RL: MOA (Modifier or additive use); USES (Uses)

(composite with plasticizers; **rubber** compns. containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties)

IT 12415-34-8, Emery

RL: MOA (Modifier or additive use); USES (Uses)

(particles; **rubber** compns. containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties)

IT 331442-07-0, Mater Bi 1128R

RL: MOA (Modifier or additive use); USES (Uses)

(**rubber** compns. containing diene **rubber** and short fibers for pneumatic **tires** with improved performance on ice and snow and wet gripping properties)

L27 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:5153 HCAPLUS

DN 140:60942

TI Studless **tire** with superior performance on ice and snow

IN Kikuchi, Naohiko; Minakoshi, Akira

PA Sumitomo Rubber Industries Ltd., Japan

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1375199	A1	20040102	EP 2003-14171	20030624
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004034745	A2	20040205	JP 2002-190990	20020628
	US 2004035514	A1	20040226	US 2003-606358	20030626
PRAI	JP 2002-190990	A	20020628		

AB The studless **tire** consists of a **tread** containing diene **rubber** and non-metal short fiber which is surface-treated in advance and dispersed in the diene **rubber** so as to be oriented in the **tread** thickness direction; wherein when measured at 25°, the **tread** has a ratio of complex elastic modulus E1 in the **tread** thickness direction and complex elastic modulus E2 in the **tire** circumferential direction of  $1.1 \leq E1/E2 \leq 4$  and a **tread rubber** hardness measured at -10° of 45-75 degrees. Thus, a studless **tire** was produced from a composition containing RSS 3 (natural **rubber**) 60, Ubepol BR 150B (cis-1,4-configuration butadiene **rubber**) 40, Showblack N 220 (carbon black) 45, Nipsil VN 3 (silica) 20, Diana Procees oil 20,

Sunnoc N (wax) 2, Nocrac 6C (antioxidant) 1.5, stearic acid 2, zinc oxide 3, **glass fiber** B (treated by sulfur containing mercaptosilane) 5, Si 69 (silane coupling agent) 1.2, sulfur 1.5, and Nocceler CZ (vulcanization accelerator) 1 part. The studless **tire** shows superior performance on ice and snow in which adhesion friction, digging friction and scratching friction of the **tire** to the road and abrasion resistance are improved and can maintain this performance.

IC ICM B60C011-14  
ICS B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST studless **tire** ice snow **glass fiber**

IT Polymer blends

RL: MOA (Modifier or additive use); USES (Uses)  
(Formalin-resorcinol copolymer-styrene-butadiene latex, **glass fiber** treating agent; production of studless **tire** with superior performance on ice and snow)

IT Natural **rubber**, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(RSS 3; production of studless **tire** with superior performance on ice and snow)

IT Carbon black, uses

RL: MOA (Modifier or additive use); USES (Uses)  
(Showblack N 220; production of studless **tire** with superior performance on ice and snow)

IT Reinforced plastics

RL: TEM (Technical or engineered material use); USES (Uses)  
(**glass fiber**-reinforced, thermosetting; production of studless **tire** with superior performance on ice and snow)

IT Butadiene **rubber**, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(of cis-1,4-configuration, Ubepol BR 150B; production of studless **tire** with superior performance on ice and snow)

IT **Tires**

(production of studless **tire** with superior performance on ice and snow)

IT **Glass fibers**, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(treated with mercaptosilane or mixture of resorcinol-formalin and styrene-butadiene latex; production of studless **tire** with superior performance on ice and snow)

IT 9003-17-2

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(butadiene **rubber**, of cis-1,4-configuration, Ubepol BR 150B; production of studless **tire** with superior performance on ice and snow)

IT 14044-97-4, Mercaptosilane

RL: MOA (Modifier or additive use); USES (Uses)  
(**glass fiber** treating agent; production of studless **tire** with superior performance on ice and snow)

IT 9003-55-8, Styrene-butadiene copolymer

RL: MOA (Modifier or additive use); USES (Uses)  
(latex, formalin-resorcinol copolymer-blends, **glass fiber** treating agent; production of studless **tire** with superior performance on ice and snow)

IT 24969-11-7, Formalin-resorcinol copolymer

RL: MOA (Modifier or additive use); USES (Uses)

(styrene-butadiene latex-blends, **glass fiber** treating agent; production of studless **tire** with superior performance on ice and snow)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:259725 HCAPLUS

DN 138:272865

TI **Rubber** composition with improved performance on icy and snowy road for **tire treads**

IN Minagoshi, Akira; Uchida, Mamoru; Ota, Takeshi

PA Sumitomo Rubber Industries Ltd., Japan

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1297973	A1	20030402	EP 2002-21550	20020926
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2003105131	A2	20030409	JP 2001-296925	20010927
	US 2003069345	A1	20030410	US 2002-256139	20020927
PRAI	JP 2001-296925	A	20010927		

AB The composition comprises 100 parts diene **rubber**, 2-30 parts staple fibers having average fiber diameter 10-100  $\mu$ m and average fiber length 0.01-4 mm,

and 1-10 parts particles having Moh's hardness  $\geq 5$  and average particle size  $\leq 500 \mu$ m. Thus, a composition comprises natural **rubber** (RSS 3) 70, butadiene **rubber** (Ubepol BR 150B) 30, carbon black (Shoblack N 220) 45, Microcryst. wax (Sun NOC N) 2, antioxidant (Nocrac 6C) 2, stearic acid 3, zinc oxide 5, paraffin oil (Diana process oil) 15, **glass fiber** 10, emery 5, sulfur

1 and vulcanization accelerator 1.5 parts was molded to give a tile showing good performance on icy and snowy road and good abrasion resistance.

IC ICM B60C001-00

ICS B60C011-14; B60C011-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST diene **rubber** staple fiber **tire tread**; emery particle diene **rubber** icy snowy road

IT Natural **rubber**, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(RSS 3; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT Carbon black, uses

RL: MOA (Modifier or additive use); USES (Uses)

(Shoblack N 220; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT Synthetic **rubber**, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(diene; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT Butadiene **rubber**, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material

use); USES (Uses)  
 (of cis-1,4-configuration, Ubepol BR 150B; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT **Glass fibers, uses**

Pumice

RL: MOA (Modifier or additive use); USES (Uses)

(**rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT **Fibers**

RL: MOA (Modifier or additive use); USES (Uses)

(staple; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT **Tires**

(**treads**; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT 9003-17-2

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(butadiene **rubber**, of cis-1,4-configuration, Ubepol BR 150B; **rubber** composition with improved performance on icy and snowy road for **tire treads**)

IT 12415-34-8, Emery

RL: MOA (Modifier or additive use); USES (Uses)

(**rubber** composition with improved performance on icy and snowy road for **tire treads**)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:84124 HCAPLUS

DN 136:119700

TI **Rubber** compositions for **tire tread** with good low temperature quality and wet grip properties

IN Tahara, Naohiro

PA Sumitomo Rubber Industries Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002030184	A2	20020131	JP 2000-214217	20000714

PRAI JP 2000-214217 20000714

AB The title compns. comprise 95-60% diene **rubber**, e.g., natural **rubber** and SBR, 5-40% halogenated polymer, e.g., Exxpro 90-10, **glass fiber**, and reinforcing agent.

IC ICM C08L009-00

ICS B60C001-00; C08K007-14; C08L009-00; C08L101-04

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST SBR diene **rubber** compn wet grip **tire tread**; brominated isobutylene methylstyrene **rubber tire tread**

IT **Glass fibers, uses**

RL: MOA (Modifier or additive use); USES (Uses)

(filler; **rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

IT Synthetic **rubber**, properties

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(isobutylene-methylstyrene, brominated, Exxpro 90-10; **rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

IT Natural **rubber**, properties

Styrene-butadiene **rubber**, properties

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(**rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

IT **Tires**

(**treads**, antiskid; **rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

IT 7440-44-0, Carbon, uses

RL: MOA (Modifier or additive use); USES (Uses)

(filler; **rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

IT 9003-55-8

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(styrene-butadiene **rubber**, **rubber** compns. for **tire tread** with good low temperature quality and wet grip properties)

L27 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:47580 HCAPLUS

DN 136:103689

TI **Rubber** composition for **tire tread**

IN Tahara, Narihiro; Uchida, Mamoru

PA Sumitomo Rubber Industries Ltd., Japan

SO Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1172406	A2	20020116	EP 2001-306101	20010716
	EP 1172406	A3	20020417		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002030183	A2	20020131	JP 2000-214225	20000714
	JP 3384787	B2	20030310		
	JP 2002047378	A2	20020212	JP 2000-233469	20000801
	CA 2352927	AA	20020114	CA 2001-2352927	20010711
	NO 2001003436	A	20020115	NO 2001-3436	20010711
	US 2002026003	A1	20020228	US 2001-903694	20010713
PRAI	JP 2000-214225	A	20000714		
	JP 2000-233469	A	20000801		

AB A **rubber** composition for a **tire tread**, with improved performance on snow and ice road without decreasing in abrasion resistance comprises (A) a diene **rubber**, (B) **glass fibers**, (C) a reinforcing agent, and (D) 1-15 parts by weight of inorg. powders having a Mohs hardness of <6.5 and an average particle size of <25 mm and/or silicone **rubber** powders based on 100 parts by weight

of the diene **rubber**. Thus, a composition was made from a natural **rubber** containing carbon black 60, **glass fibers** 10, Higilite H 43 5, a softener 28, S 1.2 and Nocceler CZ accelerator 1.5 phr.

IC ICM C08K013-04  
ICS C08L021-00; B60C001-00  
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)  
ST snow ice road **tire tread** filler; silicone **rubber** inorg powder filler **rubber**; aluminum oxide filler **rubber tire tread**  
IT Synthetic **rubber**, properties  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(diene; **rubber** composition for **tire tread**)  
IT Silicone **rubber**, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(powders; **rubber** composition for **tire tread**)  
IT Carbon black, uses  
Clays, uses  
Mica-group minerals, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(**rubber** composition for **tire tread**)  
IT Natural **rubber**, properties  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(**rubber** composition for **tire tread**)  
IT **Tires**  
(**treads**; **rubber** composition for **tire tread**)  
IT 1309-42-8, Magnesium hydroxide 1344-95-2, Calcium silicate 7631-86-9, Silica, uses **21645-51-2**, Higilite H 43, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(**rubber** composition for **tire tread**)

L27 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:910159 HCAPLUS  
DN 136:38733  
TI Pneumatic **tires** with riding comfortability and control stability  
IN Iwamura, Kazumitsu  
PA Sumitomo Rubber Industries Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2001347809	A2	20011218	JP 2000-168041	20000605
PRAI	JP 2000-168041		20000605		

AB Title **tires** contain **treads** consisting of outer cap **rubbers** and inner base **rubbers** prepared from **rubber** compns. containing 2-40 phr (preferably) short fibers oriented at right angle to the **tread** surfaces at Tb/T (Tb, T = thickness of the base **rubber** section and whole **tread**, resp.) of 0.07-0.5 and Er/Ec (Er, Ec = complex modulus in **tire** diameter and circumferential direction, resp.) of 1.2-10.0. A **tire** containing a **tread** base section (prepared from 4 phr short **glass fiber**-containing butadiene **rubber**/SBR-based composition) with Tb/T of 0.3 and Er/Ec of 3 showed improved abrasion

resistance and control stability while maintaining riding comfortability.

IC ICM B60C011-00  
ICS B60C011-00; B60C001-00; C08J005-04; C08K007-02; C08L021-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST riding comfortability **tire tread** base short fiber orientation; control stability **tire tread** base short fiber orientation; abrasion resistance **tire tread** base short fiber orientation

IT **Glass fibers**, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(short; **tire tread** base **rubbers** containing short fiber oriented in controlled direction for control stability and riding comfortability)

IT Butadiene **rubber**, uses  
Styrene-butadiene **rubber**, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(**tire tread** base **rubbers** containing short fiber oriented in controlled direction for control stability and riding comfortability)

IT **Tires**  
(**treads**; **tire tread** base **rubbers** containing short fiber oriented in controlled direction for control stability and riding comfortability)

IT 9003-17-2  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(butadiene **rubber**, **tire tread** base **rubbers** containing short fiber oriented in controlled direction for control stability and riding comfortability)

IT 9003-55-8  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(styrene-butadiene **rubber**, **tire tread** base **rubbers** containing short fiber oriented in controlled direction for control stability and riding comfortability)

L27 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:691970 HCAPLUS

DN 135:243567

TI Vibration-damping **rubber** structures and mounts

IN Mitsunari, Kazutaka

PA Kurashiki Kako K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2001254780	A2	20010921	JP 2000-66468	20000310
PRAI	JP 2000-66468		20000310		

AB Title structures, showing good durability at high temperature, consist of vibration-damping **rubber** bases, O-shielding parts covering and forming O-shielding closed spaces with the **rubber** bases, and oxidation preventers sealed in the closed spaces. Preferably, the oxidation preventers are (waste) **rubber** powders with a diameter of 0.001-5 mm and sp. surface area of 0.001-10 m<sup>2</sup>/g. Detailed illustrations are presented. A typical structure consisted of natural **rubber**

base, circular metal plate/polyamide ring/natural **rubber**  
O-shielding film covering, waste **tire rubber** powders  
as the oxidation preventers, and N (sealed in certain closed space).

IC ICM F16F015-08  
ICS F16F015-08; B60K005-12; C08J005-08; C08J005-18; C08K003-04;  
C08K003-08; C08K003-22; C08K003-26; C08K003-30; C08K003-38;  
C08K003-40; C08K005-29; C08K007-18; C08K007-20; C08L007-00;  
C08L009-00; C08L009-02; C08L009-06; C08L011-00

CC 39-15 (Synthetic **Elastomers** and Natural **Rubber**)

ST vibration damper oxygen shielding film oxidn preventer; heat resistance  
vibration damper oxygen shielder

IT Fluoro **rubber**  
Fluoropolymers, uses  
Polyamides, uses  
Polyesters, uses  
Polyolefin **rubber**  
Polyolefins  
Polyoxyphenylenes  
Polyurethanes, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)  
(O-shielding film; vibration dampers containing O-shielding films and  
oxidation preventers for high-temperature durability)

IT Polymer blends  
RL: TEM (Technical or engineered material use); USES (Uses)  
(O-shielding film; vibration dampers containing O-shielding films and  
oxidation preventers for high-temperature durability)

IT Polyurethanes, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)  
(acrylic, O-shielding film; vibration dampers containing O-shielding films  
and oxidation preventers for high-temperature durability)

IT Synthetic **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acrylic-ethylene-vinyl acetate; vibration dampers containing O-shielding  
films and oxidation preventers for high-temperature durability)

IT Acrylic **rubber**  
Polyolefin **rubber**  
Synthetic **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acrylic-ethylene; vibration dampers containing O-shielding films and  
oxidation preventers for high-temperature durability)

IT Synthetic **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(butadiene-isoprene; vibration dampers containing O-shielding films and  
oxidation preventers for high-temperature durability)

IT Natural **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(epoxidized; vibration dampers containing O-shielding films and oxidation  
preventers for high-temperature durability)

IT Butyl **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(halogenated; vibration dampers containing O-shielding films and oxidation  
preventers for high-temperature durability)

IT Nitrile **rubber**, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(hydrogenated; vibration dampers containing O-shielding films and oxidation  
preventers for high-temperature durability)

IT Synthetic **rubber**, uses

- RL: TEM (Technical or engineered material use); USES (Uses)  
 (norbornene; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Ceramics  
 Volcanic ash  
 (oxidation preventer; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Bentonite, uses  
 Carbon black, uses  
 Carbonates, uses  
 Clays, uses  
 Diatomite  
 Glass powders  
 Hydroxides (inorganic)  
 Kaolin, uses  
 Mica-group minerals, uses  
 Nepheline syenite  
 Oxides (inorganic), uses  
 Silicates, uses  
 Sulfates, uses  
 Sulfides, uses  
 Zeolites (synthetic), uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (oxidation preventer; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Synthetic **rubber**, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polyoctenamer; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Acrylic polymers, uses  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polyurethane-, O-shielding film; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT **Glass fibers**, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (resin reinforcer, O-shielding film; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Heat-resistant materials  
 Recycling of plastics and **rubbers**  
 Vibration dampers  
 (vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Polysulfide **rubber**  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)
- IT Acrylic **rubber**  
 Butadiene **rubber**, uses  
 Chlorinated polyethylene **rubber**  
 Chlorosulfonated polyethylene **rubber**  
 EPDM **rubber**  
 Isoprene **rubber**, uses  
 Neoprene **rubber**, uses  
 Silicone **rubber**, uses  
 Styrene-butadiene **rubber**, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (vibration dampers containing O-shielding films and oxidation preventers for

high-temperature durability)

IT **Tires**  
(waste **rubber**, powdered; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9002-84-0, PTFE 9003-56-9, ABS polymer 9008-66-6, nylon 610  
24937-16-4, nylon 12 25035-04-5, nylon 11 25038-54-4, nylon 6, uses  
25038-74-8 25587-80-8 32131-17-2, nylon 66, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(O-shielding film; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9003-17-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(butadiene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9010-85-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(butyl **rubber**, halogenated; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9002-88-4D, chlorinated  
RL: TEM (Technical or engineered material use); USES (Uses)  
(chlorinated polyethylene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9002-88-4D, chlorosulfonated  
RL: TEM (Technical or engineered material use); USES (Uses)  
(chlorosulfonated polyethylene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9003-31-0  
RL: TEM (Technical or engineered material use); USES (Uses)  
(isoprene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9010-98-4  
RL: TEM (Technical or engineered material use); USES (Uses)  
(neoprene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9002-86-2, PVC  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(nitrile **rubber** blends; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9003-18-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(nitrile **rubber**, hydrogenated; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate  
1305-62-0, Calcium hydroxide, uses 1309-42-8, Magnesium hydroxide  
1314-13-2, Zinc oxide, uses 1317-33-5, Molybdenum disulfide, uses  
1318-00-9, vermiculite 1335-30-4, Aluminum silicate 1343-98-2, Silicic acid hydrate  
1344-95-2, Calcium silicate 1344-96-3, Calcium silicate hydrate  
7439-89-6, Iron, uses 7631-86-9, Silica, uses 7727-43-7, Barium sulfate  
7778-18-9, Calcium sulfate 7782-42-5, Graphite, uses 12174-11-7, Attapulgate  
12174-53-7, sericite 12269-78-2, pyrophyllite 12427-27-9, pearlite  
13983-17-0, Wollastonite 14807-96-6, Talc, uses 21645-51-2, Aluminum hydroxide, uses  
177701-09-6, Aluminum silicon oxide, hydrate  
RL: MOA (Modifier or additive use); USES (Uses)  
(oxidation preventer; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 1309-37-1, Ferric oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (powdered, oxidation preventer; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 25038-76-0, Polynorbornene 25102-52-7, Butadiene-isoprene copolymer 28702-45-6, Polyoctenamer  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**rubber**; vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9003-55-8  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (styrene-butadiene **rubber**, vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

IT 9011-52-3, 1,6-Hexanediamine-sebacic acid copolymer  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (vibration dampers containing O-shielding films and oxidation preventers for high-temperature durability)

L27 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:106306 HCAPLUS

DN 134:148851

TI Studless **tires** with improved friction and abrasion resistance

IN Uchida, Mamoru; Kikuchi, Takahiko; Tahara, Naohiro; Ota, Takeshi

PA Sumitomo Rubber Industries Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001039104	A2	20010213	JP 1999-212129	19990727
	JP 3390149	B2	20030324		
	CA 2315834	AA	20010127	CA 2000-2315834	20000727
PRAI	JP 1999-212129	A	19990727		

AB The **tires** have diene **rubber**-based **treads** satisfying E1/E2 1.1-4 (E1 and E2 = complex elastic modulus in the **tread** thickness and the circumferential direction, resp.) and hardness 45-75 and containing nonmetallic staple fibers (average diameter 1-100  $\mu$ m, average length 0.1-5 mm) oriented in the thickness direction. Thus, a **tire tread** was manufactured from RSS 3 60, Ubepol BR 150B (high-cis polybutadiene) 40, Shoblack N 220 45, Nipsil VN 3 20, paraffin oil 25, wax 2, antioxidant 1.5, stearic acid 2, ZnO 3, glass fiber (11  $\mu$ m + 3 mm) 5, silane coupling agent 1.2, S 1.5, and vulcanization accelerator 1 part.

IC ICM B60C001-00

ICS B60C011-00; C08J005-00; C08L021-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST studless **tire tread** staple fiber; **glass**

**fiber** studless **tire tread**

IT Natural **rubber**, properties

RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)

(RSS 3; studless **tires** with improved friction and abrasion resistance)

IT Butadiene **rubber**, properties

RL: DEV (Device component use); POF (Polymer in formulation); PRP

(Properties); USES (Uses)  
 (of cis-1,4-configuration, Ubepol BR 150B; studless **tires** with improved friction and abrasion resistance)  
 IT Carbon fibers, uses  
     **Glass fibers**, uses  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
     (short fibers; studless **tires** with improved friction and abrasion resistance)  
 IT Abrasion-resistant materials  
     (studless **tires** with improved friction and abrasion resistance)  
 IT **Tires**  
     (**treads**; studless **tires** with improved friction and abrasion resistance)  
 IT 9003-17-2  
 RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)  
     (butadiene **rubber**, of cis-1,4-configuration, Ubepol BR 150B; studless **tires** with improved friction and abrasion resistance)

L27 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1982:493776 HCAPLUS

DN 97:93776

TI **Tires** with relatively low rotational resistance

PA Bridgestone Tire Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 57041201	A2	19820308	JP 1980-117443	19800826
	JP 01005060	B4	19890127		
PRAI	JP 1980-117443	A	19800826		

AB Compns. of natural **rubber**, isoprene **rubber**, butyl **rubber**, halobutyl **rubber**, butadiene **rubber**, SBR, EPDM **rubber**, and/or nitrile **rubber** 100, carbon black 10-100, S 0.5-2, and **fibers** (glass -transition temperature  $\leq 30^\circ$  or  $\geq 120^\circ$ , crystal m.p.  $\geq 160^\circ$ , average length 0.8-30  $\mu$ , average diameter 0.02-0.8  $\mu$ ) 3-30 parts are useful as **tire tread** base materials having low rotational resistance. Thus, a composition of isoprene **rubber** 80, butadiene **rubber** 20, carbon black 45, aromatic oil 8, stearic acid 2, poly(2,2,4-trimethyl-1,2-dihydroquinoline) 0.8, and poly(4-methyl-1-pentene) [25068-26-2] **fibers** (average length 12  $\mu$ , average diameter 0.4  $\mu$ , **glass** transition temperature  $29^\circ$ , m.p.  $235^\circ$ ) 10 parts was kneaded 5 min at  $155^\circ$ , rolled with ZnO 3.5, di-2-benzothiazolyl disulfide 0.3, N-oxydiethylene-2-benzothiazolesulfenamide 0.8, and S 1.75 parts, and vulcanized to give test pieces having relative impact resilience 130. A **tire** containing the above composition as the **tread** base had reciprocal of relative rotational resistance 116, compared with 100 for a similar **tire** containing **tread** base (relative impact resilience 102) reinforced with PVC **fibers** (average length 10  $\mu$ , average diameter 0.35  $\mu$ , glass-transition temperature  $81^\circ$ , m.p.  $212^\circ$ ).

IC B60C011-00; B60C001-00; C08K003-04; C08K003-06; C08K007-02; C08L007-00;  
C08L009-00; C08L023-16; C08L023-22; C08L023-28  
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)  
ST **tire tread** base compn; reinforcement **tread**  
base **rubber**; fiber reinforcement **tread** base;  
polymethylpentene fiber reinforcement  
IT Polyoxymethylenes, uses and miscellaneous  
RL: USES (Uses)  
(fibers, **tire tread** base compns. containing short, for  
reduced rotational resistance)  
IT Polypropene fibers, uses and miscellaneous  
Synthetic fibers  
RL: USES (Uses)  
(**tire tread** base compns. containing short, for reduced  
rotational resistance)  
IT **Tires**  
(**treads**, base compns. for, short fiber-containing **rubber**  
compns. as, for reduced rotational resistance)  
IT 9042-43-7 24936-68-3, uses and miscellaneous 24937-79-9 25034-65-5  
25068-26-2 25971-63-5 26009-55-2  
RL: USES (Uses)  
(fibers, **tire tread** base compns. containing short, for  
reduced rotational resistance)

L27 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 1981:104718 HCAPLUS  
DN 94:104718  
TI Improvements in and relating to flexible reinforcing structures for radial  
ply **tires**  
IN Hancock, Lancelot William; Hemsley, Raymond John  
PA Dunlop Ltd., UK  
SO Brit., 3 pp.  
CODEN: BRXXAA  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1574425	A	19800910	GB 1976-11059	19760319
PRAI	GB 1976-11059	A	19760319		

AB Flexible reinforcing belts for radial ply **tires** comprise  
≥2 metal cords alternating with ≥1 glass filament cord in a  
polymeric matrix. Thus, a reinforcing belt comprises a weftless  
construction of 0.25-mm-diameter steel cords each alternating with 2  
**glass** filament cords embedded in a HCHO-resorcinol latex. The  
cords are embedded in a butadiene-styrene **rubber** matrix and  
mounted circumferentially below the **tread** portion of the molded  
**tire**.

IC B32B005-02; B32B005-24; B60C009-22  
CC 38-13 (**Elastomers**, Including Natural **Rubber**)  
ST steel reinforcing cord **tire**; glass filament reinforcing cord  
**tire**; reinforcing belt radial ply **tire**  
IT **Glass fibers**, uses and miscellaneous  
RL: USES (Uses)  
(**tires** reinforced with steel cords and, radial)  
IT **Tires**  
(radial, cords, steel-glass filament reinforcing)  
IT 12597-69-2, uses and miscellaneous  
RL: USES (Uses)

(**tires** reinforced with glass filaments and cords of, radial)

L27 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1973:406471 HCAPLUS  
 DN 79:6471  
 TI Sliding friction of **rubber** along a surface of nonwoven reinforced plastics  
 AU Dolmatovskii, M. G.; Volkova, V. A.; Popova, G. L.  
 CS Nauchno-Issled. Inst. Shinnoi Prom., Moscow, USSR  
 SO Kauchuk i Rezina (1973), 32(2), 30-2  
 CODEN: KCRZAE; ISSN: 0022-9466  
 DT Journal  
 LA Russian  
 AB The friction coeffs. (F) were determined between **rubbers**, commonly used for **tire treads**, and plastic compns. considered for road resurfacing. The **rubbers** included SKMS-30 ARKM-15 blends with SKD and natural **rubber**-SKD blends filled with carbon blacks. The plastic compns. included: (1) asbestos-Lavsan nonwoven fabric impregnated with phenol-formaldehyde resin (I) [9003-35-4], (2) nonwoven **glass** cloth impregnated with I, (3) asbestos sheet impregnated with organo silicon binder, (4) wood compreg, and (5) epoxy-**rubber** composition filled with sand. The increase of **rubber** elasticity increased F. There was more correlation between the surface roughness [determined by measuring the average height(H) of surface protrusions] of the plastic compns. and F (compreg had the lowest H and the highest F), but the composition with smooth surface (compreg) had considerably lowered F after wetting with a salt solution, while the porous compns. soaked up salt solution and their F was practically the same in dry or wet conditions.  
 CC 38-12 (**Elastomers**, Including Natural **Rubber**)  
 ST friction **rubber** plastic surface; road plastic surface friction  
 IT **Rubber**, synthetic  
     (butadiene- $\alpha$ -methylstyrene, friction of, with plastic pavements)  
 IT Wood  
     (composites, for pavements, **tire** friction with)  
 IT **Rubber**, butadiene, properties  
     **Rubber**, natural, properties  
     **Tires**  
     (friction of, with plastic pavements)  
 IT Polyamide fibers  
 RL: USES (Uses)  
     (nonwoven, phenolic resin pavements filled with, **tire** friction with)  
 IT Friction  
     (of **rubbers**, with plastic pavements)  
 IT Epoxy resins  
     Plastics  
     Siloxanes and Silicones, uses and miscellaneous  
 RL: USES (Uses)  
     (pavements, friction of, with **tires**)  
 IT Asbestos  
     **Glass fibers**  
     Sand  
 RL: USES (Uses)  
     (plastic pavements filled with, friction of, with **tires**)  
 IT Pavements and Roads  
     (plastic, friction of, with **tires**)  
 IT 9003-35-4  
 RL: USES (Uses)

(pavements, friction of, with **tires**)  
IT 25034-68-8  
RL: USES (Uses)  
(**rubber**, friction of, with plastic pavements)

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Derwent Chemistry Resource display fields <<<

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<http://thomsonderwent.com/support/dwpioref/reftools/classification/code-revision/>  
FOR DETAILS. <<<

=> D QUE L33

L3 1 SEA FILE=REGISTRY ABB=ON "ALUMINUM HYDROXIDE"/CN  
L5 12985 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(WT OR WEIGHT? OR PART# OR  
PBW)  
L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(2 OR 3 OR 4 OR 5 OR 6 OR 7  
OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR  
18 OR 19 OR 20)  
L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(21 OR 22 OR 23 OR 24 OR 25  
OR 26 OR 27 OR 28 OR 29 OR 30)  
L28 10780 SEA FILE=WPIX ABB=ON (TIRE# OR TYRE#)(3A)TREAD#  
L29 45 SEA FILE=WPIX ABB=ON L28 AND GLASS?(2A)(FIBER# OR FIBRE#)  
L30 3 SEA FILE=WPIX ABB=ON L29 AND (HIGILITE OR ALUMINUM HYDROXIDE  
OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
L31 1 SEA FILE=WPIX ABB=ON L29 AND (L20 OR L23)  
L32 0 SEA FILE=WPIX ABB=ON L29 AND L5  
L33 4 SEA FILE=WPIX ABB=ON (L30 OR L31 OR L32)

=&gt; D L33 FULL 1-4

L33 ANSWER 1 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2003-231930 [23] WPIX

DNC C2003-059756

TI Silane modified biopolymeric, bio-oligomeric, oxide or silicate filler, useful for the production of rubber mixtures, is prepared by reaction of the filler with at least one silane in a condensed gas.

DC A60 A88 A95 E11 G01 Q11

IN HASSE, A; HEIDLAS, J; KIEFFER, I; KORTH, K; LUGINSLAND, H; KIEFER, I

PA (DEGS) DEGUSSA AG

CYC 32

PI EP 1256604 A2 20021113 (200323)\* GE 20 C09C003-12

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT

RO SE SI TR

BR 2002001625 A 20030311 (200323) C08K005-54

DE 10122269 A1 20021121 (200323) C08K009-06

KR 2002085837 A 20021116 (200323) C08K009-06

CN 1384136 A 20021211 (200324) C08K005-54

JP 2003064221 A 20030305 (200326) 18 C08K009-06

US 2003083516 A1 20030501 (200331) C07H011-00

MX 2002004560 A1 20021201 (200373) C08G000-00000

ADT EP 1256604 A2 EP 2002-9844 20020502; BR 2002001625 A BR 2002-1625 20020507; DE 10122269 A1 DE 2001-10122269 20010508; KR 2002085837 A KR 2002-25047 20020507; CN 1384136 A CN 2002-119037 20020508; JP 2003064221 A JP 2002-133208 20020508; US 2003083516 A1 US 2002-140041 20020508; MX 2002004560 A1 MX 2002-4560 20020507

PRAI DE 2001-10122269 20010508

IC ICM C07H011-00; C08G000-00000; C08K005-54; C08K009-06; C09C003-12

ICS B60C001-00; C01B033-18; C01B033-20; C07B047-00; C07F007-04; C07F007-08; C07F007-18; C07F007-21; C08G077-02; C08G077-04; C08G077-06; C08G077-38; C08J005-00; C08J005-10; C08K003-04; C08K003-34; C08L007-00; C08L021-00; C09C001-28; C09C001-30

AB EP 1256604 A UPAB: 20031112

NOVELTY - A silane modified biopolymeric, bio-oligomeric, oxide or silicate filler (I) is prepared by reaction of a biopolymeric, bio-oligomeric, oxide or silicate filler with at least one silane in a condensed gas.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for rubber mixtures comprising the silane modified filler (I) and optionally containing precipitated silicic acid, carbon black and/or other rubber additives.

USE - The rubber mixture are useful for the production of molded articles, pneumatic **tires**, **tire tread**, cable sheathing, tubes, drive belts, conveyor belts, rollers, shoe soles, sealing rings, profiles and dampening elements (all claimed).

ADVANTAGE - The process is carried out in the absence of an organic or aqueous solvent.

Dwg.0/0

TECH EP 1256604 A2 UPTX: 20031112

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Process: The filler (I) contains 0.1-50.0 wt.% silane. The filler is treated at 1-500 bar and 0-300degreesC for 5-720 minutes. The silane is insoluble or at least partially soluble in the condensed gas. The filler is treated by dipping, mixing or flowing through the condensed gas, preferably mixed using an appropriate mixer such as a stirrer, roller, propeller, screw, turbine, planetary mixer or impeller. The filter is precontacted with the silane before addition of the condensed gas or is precontacted with the condensed gas prior to addition of the silane. The gas is removed by evacuation or

release of pressure within less than 10 minutes or 10-180 minutes after treatment at 1-300degreesC.

Preferred Filler: The filler is kaolin, kieselguhr, mica, diatomaceous earth, clay, talc, wollastonite, silicate, **glass fibers**, **glass** cloth, zeolite, aluminum oxide, **aluminum**

**hydroxide** or trihydrate, aluminum silicate, silicic acid, zinc oxide, boron oxide, magnesium oxide, natural or modified starch, cellulose, amylose, amylopectin, cellulose acetate, maltose, cellobiose, lactose, saccharose, raffinose, glycogen, pectin, chitin, natural or modified proteins or transition metal oxide.

Preferred Gas: The condensed gas is carbon dioxide, helium, nitrogen, dinitrogen monoxide, sulfur hexafluoride, gaseous diene, gaseous fluorohydrocarbon, chlorine and/or fluorochlorohydrocarbon and/or ammonia, preferably carbon dioxide.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Silane: The silane is an organosilicon compound of formula (1)-(6).

Z-A-Sx-A-Z (1)

X1X2X3Si-A-S-SiR1R2R3 (2)

X1X2X3Si-Alk (3)

((ROC(=O))p-(G)j)k-Y-S)r-G(SiX1X2X3)s (4)

((X1X2X3Si)q-G)a-(Y-(S-G-SiX1X2X3)b)c (5)

X1X2X3Si-A-Sub (6)

x = 1-12;

Z = SiX1X2X3;

X1X2X3 = H, halogen, OH, optionally substituted alkyl or alkenyl acid, 1-6C hydrocarbon, 5-12C cycloalkyl, benzyl, halo- or alkyl substituted phenyl, 1-6C alkoxy, 5-12C cycloalkoxy, halogen or alkyl substituted phenoxy or benzyloxy;

A = 1-16C divalent hydrocarbon;

R1-R3 = 1-16C alkyl, alkoxy, haloalkyl, aryl, 7-16C aralkyl, H, halogen or X1X2X3Si-A-S-;

Alk = 1-18C alkyl, 1-5C alkoxy, halogen, hydroxy, nitrile, thiol, 1-4C haloalkyl, -NO2, 1-8C thioalkyl, -NH2, -NHR1, -NR1R2, alkenyl, allyl, vinyl, aryl or 7-16C aralkyl;

G = H, 1-18C straight, branched or cyclic alkyl, alkenyl, alkynyl, aralkyl or aryl;

R = H, (cyclo)alkyl, alkenyl, alkynyl or aralkyl;;

p = 0-5;

r = 1-3;

Z = 0-2;

q = 0-6;

a = 0-7;

b = 1-3;

j = 0-1;

c = 1-6(1-4);

t = 0-5;

s = 1-3;

k = 1-2;

Sub = -SH, -Cl, -Br, I, -NH2, -NH(A-SiX1X2X3), -N(A-SiX1X2X3)2, -NH-CH2CH2-NH2, NH-CH2CH2-NH-CH2CH2NH2, NHet, Net2, NH(C4H9)

O-C(O)-CMe=CH2, O-CH2-(CH-O-CH2) or -SCN; and

Y = C(=NR)-, -SC(=NR)-, =SC(=O)-, (-NR)C(=O), (-NR)C(=S), -OC(=O)-, OC(=S)-, -C(=O)-, -SC(=S)-, -C(=S)-, -S(=O)-, -S(=O)2-, (-NR)S(=O)2-, (-NR)S(=O)2, -SS(=O)-, -OS(=O)-, (NR)S(=O)-, -SS(=O)2, 9-S)2P(=O)-, -(S)P(=O)-, -P(=O)(- )2, (-S)2P(=S)-, -(S)P(=S)-, -P(=S)(- )2, (-NR)2P(=O)-, (-NR)(-S)P(=O)-, (-O)(-NR)P(=O)-, (-O)(-S)P(=O)-, (-O)2P(=O), (O)P(=O)-, (-NR)P(=O)-, (-NR)2P(=S)-, (-NR)(-S)P(=S)-, (-O)(-NR)P(=S)-, (-O)(-S)P(=S)-, (-O)2P(=S)-, (-O)P(=S)- or -(-NR)P(=S)-.

The silane of formula (1) is preferably ((EtO)3Si(CH2)3)2S3,

((EtO)3Si(CH2))3)2S9 or ((EtO)3Si(CH2))3)2S14; the silane of formula (3) is preferably (MeO)3-Si-C(CH3)3, (EtO)3-Si-(CH2)16-H or Me3Si-OEt; and the silane of formula (6) is preferably (MeO)3Si-(CH2)3-SH, ((C3H7O)3Si-(CH2)3)2NH or (C3H7O)3Si-(CH2)3-NH2.

ABEX EP 1256604 A2 UPTX: 20031112

EXAMPLE - Ultrasil VN3(RTM; silicic acid) (1500 g) was placed in a tumble mixer and Si69(RTM; silane) (120 g) was sprayed over the silicic acid over a 55 minute period. Mixing was continued for a further 5 minutes. The resulting coated silicic acid (130 g) was then placed in a high pressure autoclave at 70degreesC and pressurized to 150 bar with CO2. After 15 minutes the temperature and pressure were increased to 100degreesC and 200 bar and held for 1 hour. The pressure was then reduced to 80 bar and the mixture extracted with CO2 (1.2 kg) for 25 minutes followed by extraction at 300 bar and 80degreesC with CO2 (0.5 kg) for 0.5 hours. The resulting presilanized silicic acid had a density of 250 g/l, BET surface area of 144 m2/g and residual ethanol content of 388 micromol/g.

FS CPI GMPI

FA AB; DCN

MC CPI: A08-R01; E05-E; E07-A02A; E07-A02H; E31-P02B; E31-P02D; E31-P03; E31-P04; E31-P05; E31-Q04; E34-B01; E34-C02; E35-C; G01-B03

L33 ANSWER 2 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2003-140429 [13] WPIX

CR 2003-140430 [13]

DNN N2003-111567 DNC C2003-035644

TI Wheel rim support for mounting on a wheel rim inside a vehicle tire, comprises article made from a mixture of rubber and metal salt of carboxylic acid, cured with a peroxide.

DC A12 A95 E19 Q11

IN GRAH, M; GRAH, M D

PA (MICL) MICHELIN RECH & TECH SA; (MICL) SOC TECHNOLOGIE MICHELIN

CYC 95

PI WO 2002096679 A2 20021205 (200313)\* EN 30 B60C017-04

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD  
SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001265085 A1 20021209 (200452) B60C017-04

MX 2003010986 A1 20040301 (200475) B60C017-04

ADT WO 2002096679 A2 WO 2001-US17256 20010529; AU 2001265085 A1 AU 2001-265085 20010529, WO 2001-US17256 20010529; MX 2003010986 A1 WO 2001-US17256 20010529, MX 2003-10986 20031128

FDT AU 2001265085 A1 Based on WO 2002096679; MX 2003010986 A1 Based on WO 2002096679

PRAI WO 2001-US17256 20010529

IC ICM B60C017-04

AB WO 200296679 A UPAB: 20041122

NOVELTY - The support includes a cylindrical crown (2) that contacts **tire tread** during drop in inflation pressure and leaves a gap relative to tread at nominal pressure. The crown is connected to a cylindrical base (2) that conforms to a wheel rim, by an annular structure (4). The support includes a rubber structure that comprises rubber and metal salt of carboxylic acid, cured with a peroxide curing agent.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a wheel comprising the support.

USE - The support is capable of supporting the tire in the event of a drop in inflation pressure. It is used in pneumatic tires of motor

vehicles, electric vehicles, hybrid vehicles and sports utility vehicles etc.

ADVANTAGE - Provides the wheel rim support with less weight and low hysteresis, enhanced thermal stability and thermo-oxidation stability and longer service life.

DESCRIPTION OF DRAWING(S) - The figure shows a side view of the wheel rim support.

Cylindrical base 2

Crown 3

Annular structure 4

Dwg.1/2

TECH WO 200296679 A2UPTX: 20030224

TECHNOLOGY FOCUS - POLYMERS - Preferred Structure: The annular structure comprises supporting elements with partitions extending axially on each side of a circumferential median plane and distributed around the circumference of the support. Joining elements for connecting ends of partitions are mutually supported by a rib extending from the crown to the base of the support. The support includes rubber structure that comprises 20-50 parts of metal salt of carboxylic acid (per hundred parts by weight of the rubber). The rubber structure comprises filler selected from carbon black, silica, alumina, **aluminum hydroxide**, aluminum silicate, clay, calcium carbonate, **glass fiber**, microsphere, polymeric fibers and their mixtures. The filler constitutes 0-60 parts per 100 parts by weight of elastomer.

Preferred Materials: The rubber is selected from copolymers of butyl acrylonitrile, copolymers of butyl paramethyl styrene, natural rubber, polyisoprene, polybutadiene, styrene-butadiene rubber and their mixtures.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Materials: The metal salt is selected from di and tri acrylates and methacrylates, especially zinc dimethacrylate. The peroxide curing agent is selected from di-cumyl peroxide, bis-(tert-butyl peroxy)-diisopropyl benzene, t-butyl perbenzoate, di-tert-butyl peroxide, 2,5-dimethyl-2,5-di-tert-butyl peroxide hexane and their mixtures.

FS CPI GMPI

FA AB; GI; DCN

MC CPI: A08-C05; A12-T01; E05-L03C; E10-A04B; E10-C04

L33 ANSWER 3 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2002-208051 [27] WPIX

DNN N2002-158656 DNC C2002-063669

TI Diene rubber composition for **tyre tread**, includes **glass fibres**, reinforcing agent and inorganic powders softer than **glass fibres** and/or silicone rubber powders.

DC A12 A26 A95 Q11

IN TAHARA, N; UCHIDA, M

PA (SUMR) SUMITOMO RUBBER IND LTD; (TAHA-I) TAHARA N; (UCHI-I) UCHIDA M

CYC 30

PI EP 1172406 A2 20020116 (200227)\* EN 11 C08K013-04

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR

CA 2352927 A1 20020114 (200227) EN C08K003-40

JP 2002030183 A 20020131 (200227) 5 C08L007-00

JP 2002047378 A 20020212 (200227) 6 C08L021-00

NO 2001003436 A 20020115 (200227) C08L009-00

US 2002026003 A1 20020228 (200227) C08K003-40

JP 3384787 B2 20030310 (200325) 5 C08L007-00

ADT EP 1172406 A2 EP 2001-306101 20010716; CA 2352927 A1 CA 2001-2352927

*applicant*

20010711; JP 2002030183 A JP 2000-214225 20000714; JP 2002047378 A JP  
 2000-233469 20000801; NO 2001003436 A NO 2001-3436 20010711; US 2002026003  
 A1 US 2001-903694 20010713; JP 3384787 B2 JP 2000-214225 20000714  
 FDT JP 3384787 B2 Previous Publ. JP 2002030183  
 PRAI JP 2000-233469 20000801; JP 2000-214225 20000714  
 IC ICM C08K003-40; C08K013-04; C08L007-00; C08L009-00; C08L021-00  
 ICS B60C001-00; C08K003-04; C08K003-22; C08K003-34; C08K003-36;  
 C08K007-14  
 ICI C08L021-00; C08L083:04  
 AB EP 1172406 A UPAB: 20020429  
 NOVELTY - A rubber composition for a **tyre tread**  
 comprises:

- (a) a diene rubber;
- (b) **glass fibres**;
- (c) a reinforcing agent; and
- (d) 1-15 pts. weight (based on 100 pts. weight of the diene rubber) of:  
 (d-1) inorganic powders softer than the **glass fibres**  
 and having an average particle size of less than 25 microns; and/or (d-2)  
 silicone rubber powders.

USE - The composition is used for **tyre tread**.

ADVANTAGE - The composition has good dispersibility of reinforcing  
 agents without increased rubber hardness over time, can improve the  
 performance of tyres on snow and ice covered roads and has good abrasion  
 resistance. By using a silicone rubber powder with or without softeners as  
 replacement for conventional softeners (such as petroleum softeners and  
 low temperature plasticizers) solves the problems of dissipation of  
 softeners with the passage of time.

Dwg.0/0

TECH EP 1172406 A2 UPTX: 20020429

TECHNOLOGY FOCUS - POLYMERS - Preferred composition: The inorganic powders  
 have a Mohs hardness of less than 6.5 and an average particle size of not  
 less than 0.03 microns. The inorganic powders are clay, **aluminium**  
**hydroxide**, magnesium hydroxide, calcium silicate and/or mica. The  
 reinforcing agent is carbon black and/or silica. The composition may also  
 include a softener.

ABEX EP 1172406 A2 UPTX: 20020429

EXAMPLE - A tyre tread, comprising glass fibres oriented vertically to the  
 tyre tread surface, was produced by folding repeatedly a sheet of 1 mm  
 thickness and 1.5 m width obtained by rolling a rubber composition. The  
 rubber composition comprised (pts. weight) natural rubber (100), carbon black  
 (N2SA of 79 x 10 power 3 m2/kg; DBP Oil Absorption of 102 x 10 power -5  
 m3/kg; average particle size of 0.03 microns) (60), glass fibers (Mohs  
 hardness = 6.5) (10), HIGILITE H43 (RTM; inorganic powder; Mohs hardness =  
 3.0; average particle size of 0.6 microns) (5), Rubflex 26 (RTM; softener)  
 (28), sulfur (1.2) and Nocceller CZ (RTM; vulcanization accelerator)  
 (1.5). Vulcanisation was carried out at 150degreesC for 50 hours and the  
 obtained tyre was evaluated.

The degree of dispersion of carbon black (according to ASTM D2663B) was  
 good (97%), the performance on ice index was 105, performance on snow  
 index was 6 and abrasion resistance was good (105).

A comparative tread was prepared as above except that the composition did  
 not contain the HIGILITE H43 (RTM; inorganic powder).

The degree of dispersion of carbon black was bad (90%), the performance on  
 ice index was 105, performance on snow index was 7 and abrasion resistance  
 was bad (95).

FS CPI GMPI

FA AB

MC CPI: A04-B01E; A06-A00E1; A08-R04; A08-R06A; A12-T01B

L33 ANSWER 4 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
 AN 1994-275764 [34] WPIX  
 DNN N1994-217553 DNC C1994-125869  
 TI Antiskid device for automobile - made by knitting or weaving thread from synthetic rubber, into cloth-like fibre, and forming into tread pattern to improve antiskid effect on frozen roads.  
 DC A95 Q11  
 PA (HAMA-I) HAMADA H  
 CYC 1  
 PI JP 06206411 A 19940726 (199434)\* 4 B60C027-16  
 ADT JP 06206411 A JP 1991-311273 19910917  
 PRAI JP 1991-311273 19910917  
 IC ICM B60C027-16  
 AB JP 06206411 A UPAB: 19941013  
 The antiskid device is made into cloth form by processing synthetic rubber into a thread form and knitting, bundling, twisting, or weaving the thread into a fibre form, and is placed on the outside surface of a tyre.  
 Multiple layers of cloth-like fibre (6) are fixed to the synthetic rubber belt (5) reinforced by **glass fibre**, carbon **fibre**, steel fibre, etc. by using the thread of the same synthetic rubber as that of the synthetic rubber belt, or bonded to the synthetic rubber belt by spraying adhesives the cloth-like fibre. The technique for knitting cloth-like fibre is exactly the same as for clothes of wool yarn; with the technique, any tread pattern is formed on a tyre surface. If the dia. of the cloth-like fibre is large, the antiskid effect on fresh snow covered roads can be expected; if it is small, the effect on frozen roads can be expected but the effect on fresh snow-covered roads is lowered.  
 ADVANTAGE - The device can improve the antiskid effect on frozen roads by being substd. for conventional **tyre tread** grooves.  
 Dwg.0/8  
 FS CPI GMPI  
 FA AB; GI  
 MC CPI: A11-B17; A11-C05A; A11-C05B; A12-S05F; A12-S05H; A12-S08D3; A12-T01B

=> FILE COMPENDEX  
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<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
 THE BASIC INDEX >>>

=> D QUE L34  
 L3 1 SEA FILE=REGISTRY ABB=ON "ALUMINUM HYDROXIDE"/CN  
 L5 12985 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (WT OR WEIGHT? OR PART# OR PBW)  
 L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20)  
 L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30)  
 L28 10780 SEA FILE=WPIX ABB=ON (TIRE# OR TYRE#) (3A) TREAD#

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

L29 45 SEA FILE=WPIX ABB=ON L28 AND GLASS?(2A)(FIBER# OR FIBRE#)  
 L30 3 SEA FILE=WPIX ABB=ON L29 AND (HIGILITE OR ALUMINUM HYDROXIDE  
 OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
 L31 1 SEA FILE=WPIX ABB=ON L29 AND (L20 OR L23)  
 L32 0 SEA FILE=WPIX ABB=ON L29 AND L5  
 L34 1 SEA FILE=COMPENDEX ABB=ON (L30 OR L31 OR L32)

=> D L34 ALL

L34 ANSWER 1 OF 1 COMPENDEX COPYRIGHT 2005 EEI on STN  
 AN 1972(4):4866 COMPENDEX DN 720423338  
 TI See more use of mini- **glass fibers** in off- road  
 treads.  
 AU ANON  
 SO Rubber World v 163 n 4 Jan 1971 p 51-2  
 CODEN: RUBWA  
 PY 1971  
 LA English  
 AB Technical and economic considerations of the use of short- length, chopped  
**glass fibers** as reinforcing materials employed in  
 compound designed for retreading of tires (O- T- R tires). By adding 3 to  
 5% of chopped **glass** to the undertread stock of large O-  
 T- R tires (1600 and larger), and to the **tread of tires**  
 for small O- T- R trucks, in particular, subterranean traveling vehicles,  
 recappers can significantly improve the tire's retreading chances. Some  
 aspects of the uses of mini- **glass fibers** are  
 discussed in the form of questions and answers. Tire makers are testing  
 new tires reinforced with the strands, especially in tires for offroad  
 use, tractor- trailers, buses and aircraft. 23338  
 CC 818 Rubber & Elastomers  
 CT \*RUBBER TIRES; RUBBER:Reinforced; **GLASS FIBER**  
 ET O\*T; O- T; O; T

=> FILE RAPRA

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FILE LAST UPDATED: 14 JAN 2005 <20050114/UP>  
 FILE COVERS 1972 TO DATE

>>> Simultaneous left and right truncation is available in the  
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 geographical term (/GT), and non-polymer term (/NPT) fields. <<<

>>> The RAPRA Classification Code is available as a PDF file  
 >>> and may be downloaded free-of-charge from:  
 >>> [http://www.stn-international.de/stndatabases/details/rapra\\_classcodes.pdf](http://www.stn-international.de/stndatabases/details/rapra_classcodes.pdf)

=> D QUE L35

L3 1 SEA FILE=REGISTRY ABB=ON "ALUMINUM HYDROXIDE"/CN  
 L5 12985 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(WT OR WEIGHT? OR PART# OR  
 PBW)  
 L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(2 OR 3 OR 4 OR 5 OR 6 OR 7  
 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR  
 18 OR 19 OR 20)  
 L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(21 OR 22 OR 23 OR 24 OR 25  
 OR 26 OR 27 OR 28 OR 29 OR 30)

L28 10780 SEA FILE=WPIX ABB=ON (TIRE# OR TYRE#) (3A) TREAD#  
L29 45 SEA FILE=WPIX ABB=ON L28 AND GLASS?(2A) (FIBER# OR FIBRE#)  
L30 3 SEA FILE=WPIX ABB=ON L29 AND (HIGILITE OR ALUMINUM HYDROXIDE  
OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
L31 1 SEA FILE=WPIX ABB=ON L29 AND (L20 OR L23)  
L32 0 SEA FILE=WPIX ABB=ON L29 AND L5  
L35 0 SEA FILE=RAPRA ABB=ON (L30 OR L31 OR L32)

=> FILE JICST

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=> D QUE L36

L3 1 SEA FILE=REGISTRY ABB=ON "ALUMINUM HYDROXIDE"/CN  
L5 12985 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (WT OR WEIGHT? OR PART# OR  
PBW)  
L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (2 OR 3 OR 4 OR 5 OR 6 OR 7  
OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR  
18 OR 19 OR 20)  
L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A) (21 OR 22 OR 23 OR 24 OR 25  
OR 26 OR 27 OR 28 OR 29 OR 30)  
L28 10780 SEA FILE=WPIX ABB=ON (TIRE# OR TYRE#) (3A) TREAD#  
L29 45 SEA FILE=WPIX ABB=ON L28 AND GLASS?(2A) (FIBER# OR FIBRE#)  
L30 3 SEA FILE=WPIX ABB=ON L29 AND (HIGILITE OR ALUMINUM HYDROXIDE  
OR "AL(OH)3" OR ALUMINIUM HYDROXIDE OR L3)  
L31 1 SEA FILE=WPIX ABB=ON L29 AND (L20 OR L23)  
L32 0 SEA FILE=WPIX ABB=ON L29 AND L5  
L36 0 SEA FILE=JICST-EPLUS ABB=ON (L30 OR L31 OR L32)

=> FILE USPARFUL

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that are available. If you have requested multiple files, you can  
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FILE LAST UPDATED: 27 Jan 2005 (20050127/ED)  
HIGHEST GRANTED PATENT NUMBER: US6848117  
HIGHEST APPLICATION PUBLICATION NUMBER: US2005022281  
CA INDEXING IS CURRENT THROUGH 27 Jan 2005 (20050127/UPCA)  
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 27 Jan 2005 (20050127/PD)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2004  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2004

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 >>> classifications, or claims, that may potentially change from <<<  
 >>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L41

L20 71098 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(2 OR 3 OR 4 OR 5 OR 6 OR 7  
 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR  
 18 OR 19 OR 20)  
 L23 13921 SEA FILE=HCAPLUS ABB=ON GLASS?(2A)(21 OR 22 OR 23 OR 24 OR 25  
 OR 26 OR 27 OR 28 OR 29 OR 30)  
 L37 10991 SEA FILE=USPATFULL ABB=ON (TIRE# OR TYRE#)(3A)TREAD#  
 L38 468 SEA FILE=USPATFULL ABB=ON L37(L)GLASS?(3A)(FIBER# OR FIBRE#)  
 L41 3 SEA FILE=USPATFULL ABB=ON L38 AND (L20 OR L23)(3A)FIBER#(3A)(W  
 T OR WEIGHT? OR PART# OR PBW)

=> D L41 BIB AB HIT 1-3

L41 ANSWER 1 OF 3 USPATFULL on STN  
 AN 2002:12599 USPATFULL  
 TI NON-ASBESTOS FRICTION MATERIALS  
 IN NAKAMURA, TOMOKI, TOKYO, JAPAN  
 NAGATA, TAKEO, TOKYO, JAPAN  
 TAKEUCHI, KAZUHIRO, TOKYO, JAPAN  
 KOBAYASHI, MITSURU, TOKYO, JAPAN  
 PI US 2002006981 A1 20020117  
 US 6596789 B2 20030722  
 AI US 1999-383235 A1 19990826 (9)  
 PRAI JP 1998-239692 19980826  
 JP 1998-248660 19980902  
 DT Utility  
 FS APPLICATION  
 LREP BIRCH STEWART KOLASCH & BIRCH, PO BOX 747, FALLS CHURCH, VA, 22040-0747  
 CLMN Number of Claims: 28  
 ECL Exemplary Claim: 1  
 DRWN 3 Drawing Page(s)  
 LN.CNT 784  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB A non-asbestos friction material made by molding and curing a  
 composition comprised of a fibrous base, a binder, and a filler has a  
 100 Hz vibration damping factor (tan  $\delta$ ) at 300° C. minus  
 tan  $\delta$  at 50° C. value of at least -0.030. The binder may be

a rubber-modified high-ortho phenolic resin, a resin mixture of a rubber-modified high-ortho phenolic resin and a rubber-modified phenolic resin, or a resin mixture of two or more rubber-modified phenolic resins. The friction material has an excellent and long-lasting noise performance, and good wear resistance, functional stability, and fade resistance. The rapid curability of the composition enables a short molding cycle.

DETD [0053] As described above, the non-asbestos friction material of this invention is made by molding and curing a composition comprised of (A) a fibrous base, (B) a binder, and (C) a filler. The fibrous base serving as component (A) may be any inorganic fiber or organic fiber commonly used in friction materials, other than asbestos. Suitable examples of this fibrous base include inorganic fibers such as metal fibers (e.g., iron, copper, brass, bronze, and aluminum), ceramic **fibers**, potassium titanate **fibers**, **glass fibers**, carbon **fibers**, rock wool, wollastonite, sepiolite, attapulgite, and artificial mineral fibers; and organic fibers such as aramid fibers, polyimide fibers, polyamide fibers, phenolic fibers, cellulose, and acrylic fibers. These may be used alone, or as combinations of two or more thereof. Of the above, aramid **fibers** and **glass fibers** are preferred.

DETD [0055] Component (C) is a filler which may be any of well-known organic and inorganic fillers commonly used in friction materials. Suitable examples of inorganic fillers include molybdenum disulfide, antimony trisulfide, calcium carbonate, barium sulfate, magnesium oxide, graphite, calcium hydroxide, calcium fluoride, talc, iron oxide, mica, iron sulfide, metal powders (e.g., aluminum powder, copper powder, and brass powder), and vermiculite. These may be used alone or as combinations of two or more thereof. Suitable examples of organic fillers include cashew dust, **tire tread powder**, rubber dust, nitrile rubber dust (vulcanized product), and acrylic rubber dust (vulcanized product). These may be used alone or as combinations of two or more thereof. The filler (C) is preferably added in an amount of 20 to 96% by weight, and especially 40 to 85% by weight, based on the overall friction material composition.

DETD [0067]

TABLE 2

		Ex 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6	Ex
7								
Formu- lation	Aramid fibers	10	10	10	10	6	10	10
	<b>Glass fibers</b>	10	10	10	10			
15 10 10								
(pbw)	Calcium carbonate	20	20	20	20	25	20	20
	Barium sulfate	i	19	19	19	7	19	19
	Cashew dust	15	15	15	15	5	15	15
	Graphite	3	3	3	3	10	3	3
	Rubber dust	8	8	8	8	15	8	8
	Phenolic resin	A	B	C	E	A	F	G
		15	15	15	15	17	15	15
Per-	Short-time moldability	Exc	Good	Exc	Exc	Exc	Exc	
	Exc							
form-	Noise performance	Exc	Good	Exc	Poor	Good	Exc	
	Exc							
ance	Functional stability	Good	Exc	Good	Exc	Good	Good	
	Good							

DET D [0068] TABLE 3

Fade resistance	Good	Exc	Good	Good	Good	Good
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CE 1 CE 2

Formulation (pbw)		
Aramid fibers	10	
6 Glass fibers	10	
15		
Calcium carbonate	20	25
Barium sulfate	19	7
Cashew dust	15	5
Graphite	3	10
Rubber dust	8	15
Phenolic resin	D	H
	15	17
Performance		
Short-time moldability	VP	Exc
Noise performance	Poor	VP
Functional stability	Good	Good
Fade resistance	Good	Good

DET D [0071] The friction material compositions shown in Table 5 were formulated in the proportions indicated, and uniformly mixed using a Lodige mixer. The compositions were then preformed in a pressure mold under a pressure of 100 kg/cm.sup.2 for a period of 1 minute. The preforms were molded for the desired length of time at a temperature of 145° C. and a pressure of 180 kg/cm.sup.2, then heat treated or postcured at 180° C. for 5 hours. This procedure yielded friction materials in the respective examples.

TABLE 5

Ex 8 Ex 9

Formulation		
Aramid fibers	7	7
Glass fibers	7	7
Cashew dust	17	17
Calcium carbonate	13	13
Barium sulfate	21	21
Graphite	7	7
Copper powder	17	17
NBR-modified high-ortho phenolic resin.sup.1	5.5	8.5
Acrylic rubber-modified phenolic novolac resin.sup.2	5.5	2.5
Total (% by weight)	100	100
Performance		
Short-time moldability	Good	Exc
Noise performance	Good	Exc
Functional stability	Exc	Good
Fade resistance	Exc	Good

- .sup.1NBR-modified high-ortho phenolic resin with O/P ratio of 1.3 and NBR content of 14% by weight. NBR's molecular weight about 5,000
- .sup.2Acrylic rubber-modified phenolic novolac resin with O/P ratio of 0.7 and acrylic rubber content of 30% by weight. Acrylic rubber's molecular weight about 7,000

DETD [0074] The friction material compositions shown in Table 7 were formulated in the proportions indicated, and uniformly mixed using a Lodige mixer. The compositions were then preformed in a pressure mold under a pressure of 100 kg/cm.<sup>2</sup> applied for a period of 1 minute. The preforms were molded for the desired length of time at a temperature of 145° C. and a pressure of 180 kg/cm.<sup>2</sup>, then heat treated or postcured at 180° C. for 5 hours. This procedure yielded heavy duty truck brake linings in the respective examples and comparative examples.

TABLE 7

	Ex 10	Ex 11	CE 3	CE 4
Aramid fibers	7	7	7	7
<b>Glass fibers</b>	7	7	7	
Cashew dust	17	17	17	17
Calcium carbonate	13	13	13	13
Barium sulfate	21	21	21	21
Graphite	7	7	7	7
Copper powder	17	17	17	17
Acrylic rubber-modified phenolic novolac resin. <sup>3</sup>	5.5	2.5	11	--
Nitrile rubber-modified phenolic novolac resin. <sup>4</sup>	5.5	8.5	--	11
Total (% by weight)	100	100	100	100

L41 ANSWER 2 OF 3 USPATFULL on STN

AN 95:71190 USPATFULL

TI Method for using scrap rubber; scrap synthetic and textile material to create particle board products with desirable thermal and acoustical insulation values

IN Jamison, Danny G., 11841 Antietam Rd., Woodbridge, VA, United States 22192

PI US 5439735 19950808

AI US 1992-830840 19920204 (7)

DT Utility

FS Granted

EXNAM Primary Examiner: Kuhns, Allan R.

CLMN Number of Claims: 10

ECL Exemplary Claim: 6

DRWN No Drawings

LN.CNT 328

AB A method for recycling rubber scrap to yield a final product of various thicknesses and various widths and lengths capable of consolidation into a variety of building product materials. Particle boards including scrap rubber, with or without synthetic and/or textile fibers composition, of the present invention are characterized by high strength, fire resistance, water and rot resistance, and display favorable thermal and acoustical insulation qualities. Adhesives, strengtheners, and fire retardants are mixed with rubber scrap, with or without synthetic or textile fibers, and introduced into molds; or an apparatus system for

the continuous production of scrap rubber products; where heat, pressure, with or without ultrasonic sound, is introduced to produce the final product. The amount of chemicals and/or other components to be added to the composite mixture will vary according to the desired result in each of the specified categories characterized by strength and fire resistance. Extremely high properties of surface water and rot resistance are a resultant of the natural properties of rubber. Thermal and acoustical insulation efficiencies are governed by the thickness of the final product.

SUMM The present invention relates to a method for recycling rubber scrap, primarily scrap tire carcasses reduced to particles of various sizes and geometrical configurations, **tire tread** buffings, ground rubber dust, synthetic or textile fibers used in the production of rubber products, or other scrap rubber; to obtain final recycled rubber products of various defined thicknesses, widths, and lengths. The method is characterized by its use of ingredients which are intimately mixed, formed in a mold and submitted to pressure, steam, and cooled; or by production on an automated assembly line where scrap rubber particles, with or without synthetic or textile material, are fed by a apparatus system for the continuous production of scrap rubber products. Products formulated according to this invention are suitable for a variety of uses as elements in building construction such as a subfloor construction material, exterior or interior wall construction material, ceiling construction material, subroof construction material, etc.; and display favorable thermal and acoustical insulation properties.

SUMM Numerous methods and processes for fiber board and particle board are known in the prior art. U.S. Pat. No. 4,127,636 to Flanders discloses a process for making a reinforced board from lignocellulosic particles in which comminuted lignocellulosic particles, binders and other additives and additionally a plurality of elongate reinforcing filaments comprising a plurality of short filaments such as **glass fibers** or steel wires are distributed uniformly throughout the particle and binder mixture in a random orientation so as to extend generally in all directions. The lignocellulosic particles utilized are woody particles such as sawdust, bark, etc. but the resultant product can also employ any fibrous lignocellulosic material including various grain and vegetable products such as corn stocks. U.S. Pat. No. 3,916,059 to Molloy et al discloses crossbanding sheets which are made of a combination of **glass fibers** and cellulose **fibers** held together by a synthetic resin binder extending throughout the sheet, the fibers of the crossbanding sheets are oriented in a direction perpendicular to the direction of orientation of wood chips or grain of wood core. The sheets comprise a combination of **glass fibers** and cellulose **fibers**. U.S. Pat. No. 3,880,975 to Lundmark discloses a thin, continuous web produced from a starting material containing at least a major part of defibrated lignocellulose plant substance and a mixture of resinous binding agents. In addition to lignocellulose fibers and resin binders, the starting material may include mineral **fibers** including asbestos, **glass** and rockwool **fibers**; animal textile fibers, and vegetable textile fibers. Fibers were impregnated with amounts of moisture repellants, fire retarders, fungicides, insect repellants, etc. U.S. Pat. No. 4,110,397 to Wooler discloses an improvement in the molding process for composite bodies of sheets, especially those from lignocellulosic material in which an isocyanate binding agent is used. That patent defines lignocellulosic material as wood chips, wood fibers, straw, dried brushes, reeds, and grasses and may further include ground nuts and hulls from cereal crops. U.S. Pat. No. 4,565,662 to Mansson et

al discloses a method for the production of particle boards by addition of a hydrophobing agent and a curable glue to wood based particles, shaping of the particle mass and subsequent curing of the glue by application of pressure and heat.

CLM What is claimed is:

8. The rigid sheet material of claim 6 further comprising **glass fiber** mesh as **part** of the mixture.

L41 ANSWER 3 OF 3 USPATFULL on STN

AN 77:43637 USPATFULL

TI Reinforcing element for flexible structures, in particular pneumatic tires

IN Bergomi, Luciano, Milan, Italy

PA Industrie Pirelli S.p.A., Milan, Italy (non-U.S. corporation)

PI US 4042742 19770816

AI US 1971-129613 19710330 (5)

PRAI IT 1970-22692 19700331

DT Utility

FS Granted

EXNAM Primary Examiner: Lesmes, George F.; Assistant Examiner: Silverman, Stanley S.

LREP Stevens, Davis, Miller & Mosher

CLMN Number of Claims: 11

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 422

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A reinforcing element, intended in particular for pneumatic tires, and a method for obtaining it, said element consisting of a rubber compound matrix wherein are dispersed individual glass fibers oriented along a preferred direction and having a diameter to length ratio comprised between 1/10 and 1/100.

The reinforcing element shows a resistance to compression, in the direction of orientation of the fibers, which is substantially higher both than the resistance measured along any other significantly divergent direction and than the resistance of a like reinforcing element consisting solely of the said rubber compound matrix.

DETD Now **glass fibers**, having a length not smaller than 1 mm and a diameter of 9 microns are added to the compound in a percentage ranging between 8% and 20% on the total weight of the latter; in the above reported example said percentage is of 15 parts on 100 parts of the compound.

DETD The subsequent mixing operation of the compound with **glass fibers** is carried out for 1'/20" at a temperature of 70° C.

DETD After this operation the **glass fibers** are reduced into particles, whose lengths are significantly grouped about a mean value of 0.5 mm. The obtained product can then be treated in an open mill; in that case the length of the **glass fibers** is further reduced, till to have an average value of 0.25 mm.

DETD A sheet having a thickness of 3 mm is obtained by calendering from the compound; in the sheet body the most part of the particles of **glass fibers** are oriented in the direction of motion of the sheet itself, by virtue of a phenomenon already known in rubber industry.

DETD Reinforcing element, intended in particular to be used in pneumatic

**tire treads.**

- DETD Now **glass fibers**, having a minimum length of 1 mm and a diameter of 9 microns are added to the compound in a percentage ranging between 2% and 7% on the total weight of the latter; in the above reported example, **3 parts of glass fibers** are added on 100 parts of the compound.
- DETD The subsequent mixing of the compound with **glass fibers** is carried out for 1'/20" at a temperature of 70° C.
- DETD After this operation the **glass fibers** are reduced into particles, whose lengths are significantly grouped about a mean value of 0.45 mm.
- DETD A shaped band, to be used as the **tread** of pneumatic **tires**, is obtained by extrusion from said compound; in the band body the most part of the particles of **glass fibers** are oriented in the direction of motion of the band itself, also in this case by virtue of an already known phenomenon.
- DETD The plasticity of this compound is not substantially different from that indicated in Examples 1 and 2. **Glass fibers**, having a length not smaller than 1 mm and a diameter of 9 microns, are added to the compound in an amount of 6% on the weight of the compound itself. The subsequent mixing of the compound with **glass fibres** is carried out for 1'/20" at a temperature of 70° C.
- DETD After a further treatment in an open mill, a shaped product is obtained by extrusion from this compound; in the body of the product the most part of the **glass fibers** are oriented in the direction of the extrusion motion.
- DETD After the extrusion operation, the **glass fibers** are reduced into particles, whose lengths are significantly grouped about a mean value of 0.24.
- DETD To carry out the evaluation of the length of the **glass fibers** dispersed in the rubber compound, a specimen is taken from the obtained product. Said specimen is squeezed in a press in the direction orthogonal to the direction of the length of the fibers, until a thickness of 0.1 mm is reached. It is to be remarked that, during said operation, the **glass fibers** lose partially their orientation, in consequence of the deformation suffered by the specimen, but do not suffer any further rupture, since the compression is exerted in the direction orthogonal to the direction of said fibers. A radiograph of the squeezed specimen is made; said radiograph, appropriately enlarged, gives the possibility of measuring the length of the fibers embedded in the compound.

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